

equation,  $E_g < 3.4 * (1 - X) + 1.95 * X - 1.0 * X * (1 - X)$ , in claim 21 is fully supported by the specification and as such respectfully request reconsideration and withdrawal of this rejection.

**Claim Rejections Under 35 U.S.C. § 103**

A. Claims 21-27 were rejected under 35 U.S.C. § 103(a) over Watanabe (U.S. Patent No. 5,537,433) in view of Shakuda (U.S. Patent No. 5,557,115). Applicants respectfully traverse this rejection.

Claim 21 recites, in part, a method for manufacturing a light-emitting device, wherein the light-emitting layer has an indium mole fraction  $X$  and emits light of wavelength (nm) =  $1239.8/E_g$  (eV), such that the emitted light has an energy level  $E_g < 3.4 * (1 - X) + 1.95 * X - 1.0 * X * (1 - X)$ . As admitted in the Office Action, this feature of claim 21 is not taught by Watanabe. Further, Applicants submit Shakuda neither teaches nor suggests the relationship between the wavelength of visible light emitted from the light-emitting layer, the photon energy, and the mole fraction of indium. Rather, Shakuda teaches, column 4, lines 22-33, that the light-emitting layer 5 contains zinc as an additive, which when increased, increases the wavelength of light emitted from the light-emitting layer. As discussed in the background and on page 4, lines 3-10 of the present application, impurities in the  $\text{In}_x\text{Ga}_{1-x}\text{N}$  layer will cause the wavelength of emitted light to shift toward longer wavelengths. Accordingly, Shakuda teaches that the light-emitting layer including zinc with a mole fraction of indium equal to 0.15 emits light at 470 nm because of the addition of zinc (impurity).

Claims 22-27 are allowable for at least the reasons presented above by virtue of their dependence on independent claim 21. In addition, with respect to page 3, lines 20-22 of the Office Action, which states “it is obvious that LED could emit green light, which has a wavelength about 520 nm, if Shakuda changes the indium mole fraction such as 0.19-0.26,” it is respectfully noted that the standard of obviousness is that the claimed invention would have been obvious to one of ordinary skill in the art at the time of Applicants’ invention, not what one of ordinary skill, or the inventors of an applied reference, could have done if they had the benefit of Applicants’ disclosure as a roadmap for hindsight reconstruction of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

**B.** Claims 28-31 were rejected under 35 U.S.C. § 103(a) over Watanabe in view of Shakuda and further in view of Ishikawa et al. (U.S. Patent No. 5,977,565). Applicants respectfully traverse this rejection.

Claims 28-31 are allowable for at least the reasons presented above by virtue of their dependence on independent claim 21. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

**C.** Claim 32 was rejected under 35 U.S.C. § 103(a) over Watanabe in view of Shakuda and further in view of Nitta et al. (U.S. Patent No. 6,258,617). Applicants respectfully traverse this rejection.

Claim 32 is allowable for at least the reasons presented above by virtue of its dependence on independent claim 21. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

### **Conclusion**

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,  
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